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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/885,944 | 06/22/2001 | Tetsuya Toshine | Q65162 | 6218 |

7590 01/19/2005
SUGHRUE, MION, ZINN, MACPEAK & SEAS
2100 Pennsylvania Avenue, N.W.
Washington, DC 20037-3202

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| EXAMINER |
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ANGEBRANDT, MARTIN J

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| ART UNIT | PAPER NUMBER |
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1756

DATE MAILED: 01/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/885,944

Applicant(s)

TOSHINE ET AL.

Examiner

Martin J Angebrannt

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11/8/04 & 12/3/04.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3 and 4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3 and 4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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1. The response provided by the applicant has been read and given careful consideration.

Responses to the arguments offered by the applicant are presented after the first rejection to which they are directed. The subject matter added appears in sections [0075] and [0016] of the prepub of the instant application, therefore there is no issue of new matter.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3 Claims 1 and 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morii et al. '378.

Morii et al. '378 teach laminates such as that of figures 6b, 10a, which comprise a protective layer (7), an adhesive layer (5"), a hologram layer (6), a second adhesive layer (5') and a removable substrate (see illustrative example 4, col. 27-28). The laminate of figure 10b, which comprise a protective layer (7), an adhesive layer (5"), a hologram layer (6), a second adhesive layer (5'), a reflective layer (9) a third adhesive layer (5) and a removable substrate (11). Useful volume holographic recording materials are disclosed as including a matrix polymer, a photopolymerizable compound, a photopolymerization initiator and a sensitizing dye. (12/28-16/35, particularly 12/32-39). The hologram is stabilized during a monomer migration step via heating and therefore the matrix polymer must allow monomer migration (15/57-60). Useful adhesive layer materials include acrylic, acetate, gelatin, casein, polyvinyl acetate and hot melt resins. (12/7-27 and 33/49-65). The surface of the surface protective layer (7) may be provided with a release layer and a rigid film initially adhered to it and then peeled from it. (18/33-52)

It would have been obvious to one skilled in the art to modify the invention of illustrative example by providing the surface protective layer with a release layer and a peelable substrate based upon the disclosure to do so and further, it would have been obvious to use the water soluble adhesive materials, such as acrylate, gelatin, casein, polyvinyl acetate as the adhesive agents based upon the disclosure of these materials as useful adhesives. The relative softening points of the adhesive layers are inherent as the medium does not come apart when applied.

The examiner notes that the argued position describes water or *aqueous* solvent (systems ?) as preventing the migration of low molecular weight materials to or from the holographic layer. The claims are not limited to aqueous systems and therefore the argued position differs from the scope of coverage sought. The examiner also points out that comparative example 1 lacks the adhesive layers (5', 5'') of the prior art and therefore is not a better comparison than the prior art. If the applicant had shown the criticality of the composition of the adhesive layers, then the claims might be found allowable. The applicant has not shown that the adhesive layers act as any more of a barrier than those of the prior art. Furthermore, the solvent of the adhesive layers could migrate into the holographic layer causing swelling as well, so the argument is factually weak. The rejection stands.

With respect to the declaration, it assumes but does not state that the thermoplastic layer in example 1 of the specification was applied from an aqueous solution. If this is the case, then the declaration should reflect this and to be commensurate in scope with the coverage sought, the applicant would have to replace "therein" with - - an aqueous solution- - in claim 1. Also it is not clear what the composition of water soluble heat sensitive adhesive EC1700 used in example 1 is. Is it a ethylene-vinyl acetate copolymer ? Also the declaration states that the claimed

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invention provides unexpected results, but does not state what these results are. In example 1, there is neither a shift nor a change in the diffraction efficiency (brightness), while in the case of the comparative example of the declaration using the solvent based thermoplastic layer results in reduction in diffraction efficiency and a shift in the replay wavelength to shorter wavelengths. As the wavelength of replay is proportional to the fringe spacing, the hologram is shrinking and materials seems to be leaving the holographic recording layer. In the case of the comparative example the monomer is migrating into the thermoplastic layer as well, but not in the case of the inventive example. The examiner notes that in the case of the comparative example, the solvent for the recording layer and the thermoplastic layer is toluene and so the presumption of solvation of the monomer by the composition of organic solvent based thermoplastic layer of the comparative examples is warranted. As the monomer is organic solvent soluble, it would not be expected by one of ordinary skill in the art to be water/aqueous soluble.

5 Claims 1 and 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morii et al. '378, further in view of Van Geert et al. WO 00/35662 and Smothers et al. '283.

Van Geert et al. WO 00/35662 teaches an organic solvent based ink layer applied to a hologram, where the holographic layer was partially dissolved. (2/1-14). This is disclosed as being prevented by a water based primer layer (2/26-3/6). The holographic layer is disclosed as being an organic solvent based layer (3/13-21)

Smothers et al. '283 teach that an adjacent layer (diffusion element) may be constructed of a material, which absorbs plasticizer or other diffusible components, causing shrinkage and shifting the replay to shorter wavelengths (3/28-34). Monomers are disclosed as diffusible species is disclosed. (3/10-21).

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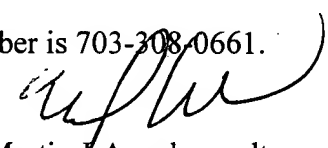
In addition to the basis provided above, the examiner cites Van Geert et al. WO 00/35662 and/or Smothers et al. '283 to support the assertion that shifting to shorter wavelengths is due to shrinkage due to monomer migration out of the holographic layer (Smothers et al.) and that the use of an aqueous solvent based layer is known in the art to prevent migration of organic materials in holographic transfer media as evidenced by Van Geert et al. WO 00/35662, which further supports the examiner's position that the use of water based adhesives would have been obvious in the invention of Morii et al. '378 and would be expected to prevent migration of monomer or other organic soluble species.

6 Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin J Angebranntt whose telephone number is 571-272-1378.

The examiner can normally be reached on Monday-Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9309 for regular communications and 703-872-9309 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



Martin J Angebranntt
Primary Examiner
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01/14/2005